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# Economic Conditions in Montana

## A Report to the Governor

December 1976

Department of Community Affairs
Research and
Information Systems Division

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# ECONOMIC CONDITIONS IN MONTANA

## A Report to the Governor

December 1976

Department of Community Affairs
Research and Information Systems Division

This publication was accomplished with the financial assistance of the Old West Regional Commission. The report was prepared by the Research and Information Systems Division and includes industry specific statements by several experts.

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DCA
MONTANA DEPARTMENT OF COMMUNITY AFFAIRS
Capitol Station, Helena, Montana 59601

Thomas L. Judge
Governor

December 30, 1976

The Honorable Thomas L. Judge
Governor of Montana
Capitol Station
Helena, Montana 59601

Dear Governor Judge:

I am pleased to submit for your study the attached report on the state of the Montana economy.

The report represents the efforts of economists and industrial specialists within the department, the university system, and the private sector. Specific references for several sectors of the analysis are included in the body of the report. The remaining sections represent DCA staff contributions. The project was funded by the Old West Regional Commission.

All who have contributed to the program are hopeful this document will be useful in planning more effectively for the future of Montana.

Very truly yours,

Judith H. Carlson

Judith H. Carlson
Director

/njk

Attachment

Judith H. Carlson, Director 406/449-3494

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# EXECUTIVE SUMMARY

An idea of the future direction of Montana's economy is important to decision makers in both government and private business. The purpose of this report is to present a review of the performance of Montana's economy in terms of employment, unemployment, income and population. A series of close looks at each of Montana's major industries is also provided.

* * * * *

Employment growth in Montana during the last 10 years has closely resembled the national pattern. Most of the employment increases have been found in the service and trade related sectors. Employment in the primary sectors, such as agriculture, mining and manufacturing has been relatively stable.

* * * * *

Montana's unemployment rate is generally greater than the national figure. This consistent difference is almost entirely the result of the highly seasonal nature of Montana's industries. Nearly all of Montana's industries are more seasonal than their national counterparts, resulting in a higher average unemployment rate.

* * * * *

With the exception of the wood products and mining industries, employment in Montana is relatively insulated from national recessions. Overall Montana employment levels and unemployment rates are affected by recessions, but not to the degree that those of the more industrial states are influenced.

* * * * *

The periodic changes in Montana per capita income have been for the most part the result of variations in farm income. The effects of national recessions on Montana per capita income are relatively small. Western Montana, however, is more affected by national cycles than the remainder of the state

* * * * *

Since 1970, population estimates indicate that more individuals are coming into the state than leaving. This net inmigration is the reason why Montana's population has grown faster than the national rate. Other mountain states have also experienced similar growth patterns.

* * * * *

While Montana's agriculture has generally experienced greater prosperity in the early 1970's than in the 1960's, the blessings have been mixed. Since 1973, cattle prices have been sharply lower, grain prices took a critical dip in 1976, locally low levels of precipitation occurred in some years and production costs have increased at least twice as fast as the general rate of inflation. These facts have caused great economic hardship for some producers and for nearly all ranchers who depended primarily on cattle. Grain producers joined this list in 1976.

* * * * *

Employment in the wood products industry, an industry of overwhelming importance in western Montana, began to decline in 1974 and continued low through 1975. This employment decline was in response to the recession and sharp drop in housing construction. However, during the first half of 1976, housing starts were up approximately forty percent above the previous year's level.

* * * * *

Montana's production of coal has increased dramatically over the last few years, and additional increases can be expected in the future. Employment prospects in metallic mining are encouraging. Several copper deposits and one or more gold deposits may be developed and mined by open pit methods if metal prices remain stable or increase. The potential for the utilization of Montana's iron deposits is also believed to be very good.

* * * * *

Montana's crude oil production slipped from 34,533,962 barrels in 1974 to 32,850,749 barrels in 1975. During this same time, because the regulated price has been allowed to move upward, the value of the crude oil produced in 1975 grew to $275,096,151 over

$236,698,022 in 1974. The average yield per well was down significantly, but the total decrease in production was minimized by the large increase in the number of wells.

* * * * *

The travel sector, another major Montana industry, has grown substantially over the last few years. As national income and leisure time rise, it is likely that this sector will experience even greater gains, particularly in light of the spectacular natural attractions found in Montana. This natural beauty and colorful past is no doubt the reason for the current interest of major film producers in the state.

# MONTANA'S ECONOMIC GROWTH

## *INTRODUCTION*

The welfare of any locality, state, region, or nation is closely, but of course not exclusively, tied to economics. Therefore, an idea of the future of Montana's economy is important to decision makers in both government and private business. Clearly, many of the changes which affect Montana's economy are the result of external events (national, international, climatic, etc.) over which the state has little control. Furthermore, these market and policy changes are perhaps more the rule than the exception. This high degree of uncertainty makes speculation about the future a very unsure business.

Historically, Montana's economic role has been the specialized one of providing raw materials for the national marketplace. As a result of the state's natural resource base, the economy has been largely resource, rather than market oriented, so the importance of manufacturing products for final consumption has been relatively low. In addition to such natural factors, this resource orientation has been partly reinforced by geography and the resultant relatively poor access to national markets. Without any doubt, the resource based industries (agriculture, mining and wood products) have provided the basis for the long term development of the state, and in all likelihood it is these industries which will determine the future of Montana. Concentration in these industries has not been accidental, but rather the result of natural market forces.

The relative importance of the primary industries, however, has changed over time. Perhaps the most dramatic long-term historical change which has affected not only Montana but the nation as well, has been the gradual shift in employment composition. At the turn of the century nearly everyone was employed in some form of primary production, while today the situation is quite different, with more employment in the service and trade related sectors. This reversal appears to be the result of two principal factors. First, the rapid productivity increases in the primary industries displaced workers, many of whom found employment within the service and trade sectors. Secondly, overall income increased, both in Montana and nationally, bidding up the demand for secondary activity. During this slow process, the state and nation became increasingly urbanized. In addition, the economic role of women simultaneously gained importance.

Substantial structural changes have occurred; but the fact still remains that the state's future growth is directly tied to the health of the primary sectors. Without the exporting industries there would be no secondary employment, and, without an increasing stimulus from the exporting industries, it is doubtful that service and trade growth will expand indefinitely.

It is difficult to overstate the economic significance of the resource industries on the overall economy of Montana. However, when discussing these industries it is often easy to overlook the importance of other sectors. The service and trade sectors do generate considerable employment and income, as do other industries. Simply stated, all sectors (and all the rest of the states for that matter) are interrelated, buying and selling, importing and exporting, where the success of each is dependent on the other. Montana's specialty, its competitive edge, is vastly different from that of the industrial East. To be sure, some industrial diversification will gradually occur in Montana. This metamorphosis will very likely be as slow as it was elsewhere, and will be determined by economic as well as environmental feasibility. Although this report cannot realistically touch on environmental trade-offs, they do exist, and will presumably play a major future role in shaping the state's economy.

The purpose of the following sections of the report is to present in greater depth the nature and condition of Montana's current economic structure. The performance of Montana in terms of employment, unemployment, income, and population is examined, followed by a series of close looks at the performance and future issues in each of Montana's major industries. Some long-term energy-related scenarios are also discussed. The intent throughout the report is not to recommend directions but to summarize both facts and issues that will aid the decision makers who will help shape the future of Montana.

# *EMPLOYMENT AND UNEMPLOYMENT*

## *Employment*

The most regularly gathered and reliable data concerning Montana's economy are employment statistics. Changes in employment levels and in the relative importance of industries in employment terms give a good idea of the direction of Montana's economy.

Table 1 shows that total employment grew about twice as much from 1970 to 1975 as it did between 1965 and 1970. This growth, however, was not evenly spread across economic sectors.

It is often useful to divide industries into primary industries which export goods and thus provide the base of activity for the region, and derivative industries which provide services to local residents and industries. Primary employment has actually declined slightly since 1970 while derivative employment has grown steadily. This behavior is puzzling to those who believe that derivative industrial growth can come only as a result of primary industrial growth. The problem results from several complicating factors.

**Table 1**

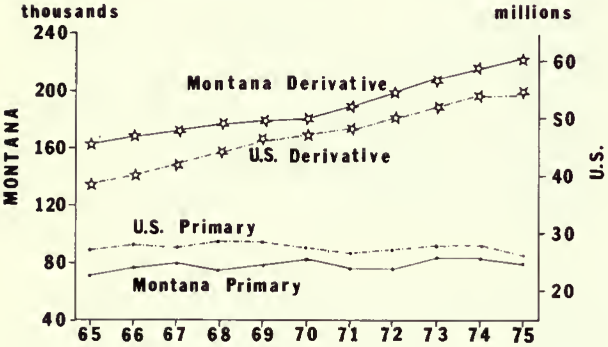
**EMPLOYMENT IN SELECTED MONTANA INDUSTRIES**

| INDUSTRY | 1965 | 1970 | 1975 | Change 1965-70 | Change 1970-75 |
|---|---|---|---|---|---|
| **PRIMARY** | | | | | |
| Agriculture | 35200 | 36100 | 34300 | 900 | — 1800 |
| Mining | 7500 | 6600 | 6700 | — 900 | 100 |
| Metal | 4600 | 4000 | 3100 | — 600 | —900 |
| Coal, Quarrying and Non-metal | 1100 | 800 | 1600 | — 300 | 800 |
| Oil and Gas | 1800 | 1800 | 2000 | 00 | 200 |
| Manufacturing | 22200 | 23900 | 22200 | 1700 | — 1700 |
| Lumber and Wood Products | 8600 | 8200 | 8200 | — 400 | 00 |
| Primary Metals | 3600 | 4700 | 3300 | 1100 | — 1400 |
| Food and Kindred Product | 4300 | 4300 | 3700 | 00 | — 600 |
| Other Manufacturing | 5700 | 6700 | 7000 | 1000 | 300 |
| Railroad | 7500 | 6600 | 6100 | — 900 | — 500 |
| Federal Government | 12100 | 11900 | 14200 | — 200 | 2300 |
| Total Primary | 84500 | 85100 | 83500 | 600 | — 1600 |
| **DERIVATIVE** | | | | | |
| Transportation, Communication and Utilities, excluding Railroad | 10000 | 10800 | 13100 | 800 | 2300 |
| Construction | 12000 | 11000 | 12400 | —1000 | 1400 |
| Trade | 42900 | 48100 | 59500 | 5200 | 11400 |
| Services | 33300 | 41800 | 55100 | 8500 | 13300 |
| State and Local Government | 33800 | 40700 | 50700 | 6900 | 10000 |
| All Other | 30000 | 28200 | 30900 | —1800 | 2700 |
| Total Derivative | 16200 | 180600 | 221700 | 18600 | 41100 |
| TOTAL | 246500 | 265700 | 305200 | 19200 | 39500 |

SOURCE: Montana Department of Labor and Industry, Employment Security Division

Figure 1 compares United States and Montana employment from 1965 to 1975. The striking resemblance between the trends shows that the derivative growth phenomenon is not confined to Montana. Employment in the primary industries has been nearly constant while derivative employment has maintained a steady growth. Clearly, increases in derivative activity both in Montana and nationally cannot be explained simply as a result of primary activity.

fig. 1
PRIMARY AND DERIVATIVE EMPLOYMENT IN MONTANA AND U.S.



SOURCES: U.S. Department of Commerce, and the Montana Department of Labor and Industry.

This relative shift in employment composition is the result of long-term changes in the economy, several of which were mentioned in the introduction. There has also been a large increase in the labor force as a result of a change in the age structure of the population. The "baby boom" has resulted in more people entering the labor force than ever before. This age effect, coupled with the fact that more women are working, has greatly expanded the number of individuals seeking employment. The primary industries, where productivity has grown the most, have not been able to provide employment for these new workers. The service and trade sectors have not experienced this rapid growth in productivity and have absorbed these individuals. Simultaneously, consumption of the output of services and trade sectors has grown. Public and private sector services are increasingly substituted for activities once provided in the home. While it is true that many part-time positions have been offered in these sectors, even after adjustment for full time equivalents, the rate of increase in employment has been great.

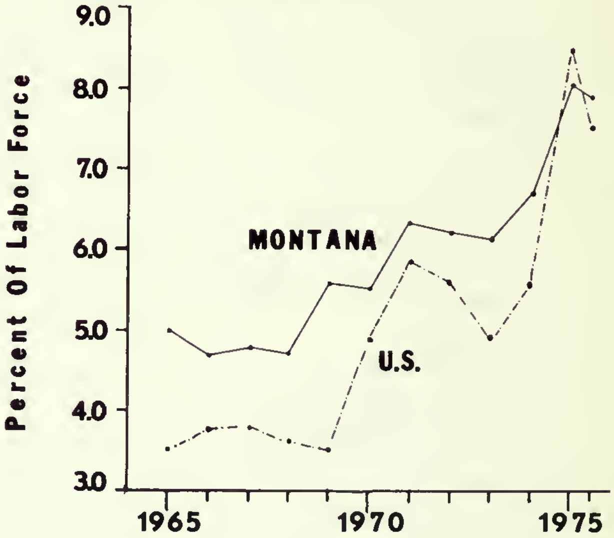
Although the preceding may be interpreted as under-emphasizing the importance of primary industries to Montana, the intent is to explore the pattern of growth. Healthy primary industries are essential for the continued progress of the derivative industries.

Most of the primary industries as well as the government sector will be examined in more detail later in the report. Table 1 merely hints at the pattern of change. In manufacturing the decline in primary metals and food industries has not been matched by growth in other manufacturing, resulting in a decline in total manufacturing from 1970 to 1975. In the mining sector the rise of energy-related industries has compensated for the employment decline of metal mining in Montana. Agriculture, on the other hand, has shown a long, steady decline.

## *Unemployment*

The unemployment rate is perhaps the most frequently used statistic in economic discussion, and perhaps the most misunderstood. Its calculation depends on two factors: the level of employment, and the total size of the labor force. Data for the former are gathered regularly so it can be accurately determined. But the "size of the labor force" is difficult even to define, and its calculation requires many assumptions. The methods change frequently and differ between states. Thus, comparisons over time and with national figures are made with some risk.

fig.2
UNEMPLOYMENT IN MONTANA AND THE UNITED STATES, 1965 to 1975



SOURCES: Montana Department of Labor and Industry, and the U.S. Bureau of Labor Statistics.

With that caution in mind, Figure 2 suggests several observations. The first is the general rise of unemployment rates over time. This has been primarily the result of the tremendous growth in the labor force mentioned earlier. Although service and trade sectors have grown and absorbed most of the new entrants into the labor force, not all new labor force entrants have been successful at finding work, resulting in higher unemployment rates. The spread between the Montana rate and that of the United States has been fairly consistent except for recession years. This regular pattern points to a structural difference in the labor force rather than to poor economic performance. Montana's weather has a great effect on seasonal employment patterns of its industries. In fact, almost all of Montana's industries are more seasonal than their national counterparts. Consequently, during the winter months Montana has many more people unemployed proportionate to its labor force than would be expected nationally for that time of year. This results in a higher average unemployment rate and accounts for the difference between Montana and national rates.

The last noticeable feature of Figure 2 is the differential effect of recessions on Montana and the nation. The figure shows a narrowing of the difference between rates in 1970 and 1971 and an actual reversal of positions during the 1974 and 1975 recession. Montana is relatively insulated from national recessions because of the state's agricultural base. It must not be forgotten, however, that western Montana is much more sensitive to recessions than the rest of the state. The copper mining and metal processing sectors tend to be quite sensitive to business cycles. The lumber and wood products industry is also affected both by declines in the housing market and by industrial recessions which reduce the demand for packaging products.

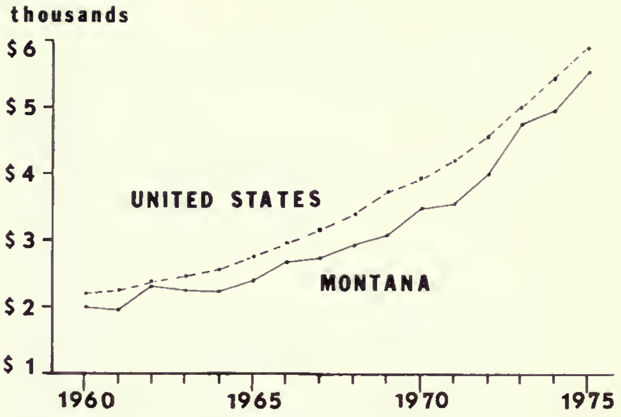
What can Montanans expect in the future in terms of employment structure and unemployment? Given no radical declines in total primary employment, Montana should see continued growth in the derivative sector and keep pace with national growth. This growth will slow as the effect of the "baby boom" passes and reduces the number of additions to the labor force. As long as the method of calculating unemployment rates remains unchanged, Montana should continue to maintain its one percent difference from national rates.

# INCOME

Income data serve as another useful indication of economic well-being. Of course, the overall welfare of the state is determined by many intangible factors which are perhaps equally important; but no one would suggest that intangible income buys groceries.

Montana per capita income has grown at approximately the national rate; sometimes faster, and sometimes slower. However, since 1960 Montana per capita income has been roughly ten percent lower than the national level. This consistent difference, illustrated in Figure 3, is difficult to explain, but may be partly due to the rural nature of the state. In other words, the spread may be the result of industrial composition and a lower than average labor force participation rate. While numerous explanations, some of them non-economic, could be advanced, the issue is so clouded by data estimation problems that no single answer exists.

fig. 3
**PER CAPITA INCOME IN MONTANA AND THE U.S.**
**(Current Dollars)**

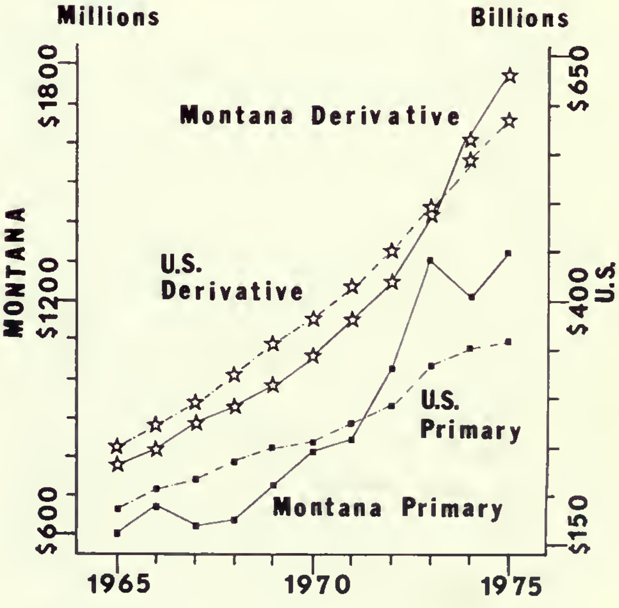


SOURCE: U.S. Department of Commerce

The periodic ups and downs in Montana per capita income have for the most part been the result of variations in farm income. The comparatively small variations in the national trend have been the result of business cycles, but as has been pointed out, agricultural states such as Montana are relatively insensitive to national cycles. Certainly some effects are felt (e.g., wood products and metal mining), but not to the degree experienced by the most industrialized states.

In terms of the long-run trend, much of the absolute increase in income, both here and nationally, has been

fig. 4
**PRIMARY AND DERIVATIVE INCOME IN MONTANA AND U.S.**



SOURCE; U.S. Department of Commerce

## Table 2
## EARNINGS FOR SELECTED INDUSTRIES IN MONTANA
### Millions of Current Dollars

| | 1965 | 1970 | 1974 | 1975 | % Change 1965-70 | % Change 1970-75 |
|---|---|---|---|---|---|---|
| **PRIMARY INDUSTRIES** | | | | | | |
| Agriculture | 213 | 330 | 524 | 582 | 54.9 | 76.4 |
| Mining | 55 | 64 | 96 | 102 | 16.4 | 59.4 |
| Metal | 34 | 40 | 52 | NA | 17.6 | NA |
| Coal, Quarrying and Non-metal | 8 | 9 | 20 | NA | 12.5 | NA |
| Oil and Gas | 13 | 15 | 24 | NA | 15.4 | NA |
| Manufacturing | 151 | 199 | 266 | 271 | 31.8 | 36.2 |
| Lumber and Wood Products | 54 | 65 | 99 | NA | 20.4 | NA |
| Primary Metals | 28 | 41 | 43 | NA | 46.4 | NA |
| Food and Kindred Products | 27 | 32 | 40 | NA | 18.5 | NA |
| Other Manufacturing | 42 | 61 | 84 | NA | 17.3 | NA |
| Railroad | 54 | 68 | 93 | 103 | 25.9 | 51.5 |
| Federal Government | 128 | 165 | 238 | 279 | 28.9 | 69.1 |
| Total Primary | 601 | 826 | 1217 | 1337 | 37.4 | 61.9 |
| **DERIVATIVE INDUSTRIES** | | | | | | |
| Utilities excluding Railroad | 73 | 98 | 156 | 159 | 34.2 | 62.2 |
| Construction | 103 | 124 | 189 | 181 | 16.9 | 46.0 |
| Trade | 234 | 306 | 458 | 511 | 30.8 | 67.0 |
| Services | 221 | 313 | 452 | 521 | 41.6 | 66.5 |
| State and Local Government | 154 | 223 | 348 | 404 | 44.8 | 81.2 |
| Total Derivative | 785 | 1064 | 1603 | 1776 | 35.5 | 66.9 |
| TOTAL | 1386 | 1890 | 2820 | 3113 | 36.4 | 64.7 |

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis.

inflationary. For example, during the sixteen year period 1960-1975, national unadjusted per capita income grew 163 percent, while the real growth in purchasing power was much lower, at 45 percent. Although the national price index could be used to adjust the Montana data, the result might not accurately represent real gains. Montana prices as well as the type of products purchased here might vary significantly from the national norm. Unfortunately, no specific Montana price information is available, further complicating national and state comparisons. Because of such difficulties, a review of the sources of Montana income is more helpful in understanding income trends. This information is provided in Table 2 and depicted graphically in Figure 4.

Aside from a few erratic changes, the result of exceptionally good agricultural years, the composition of Montana income has essentially followed the national trend, with derivative income growing more than primary income. However, this is not surprising because most of the employment growth has been found within the derivative sector.

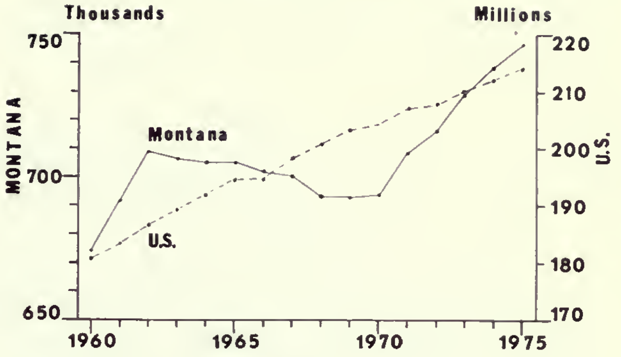
In summary, most of the recent growth in the primary category originated with the agricultural and federal government sectors. Mining and railroad activity also grew, but at a more moderate rate. Overall manufacturing increases were weak, growing somewhat slower than the national rate of inflation. Growth within the derivative industries was somewhat more uniform.

The relatively slow growth in construction was related to the national downturn in the housing market which occurred in 1973. The fastest growing sector, statewide, was state and local government. More attention will be devoted to a discussion of specific industry changes and issues in the next section of the report.

# *POPULATION*

Montana's population, like employment, has shown different behavior in the seventies than in the two previous decades. In the fifties and sixties, economic growth was slow and, as a result, many residents left the state to find work. As Figure 5 shows, in the sixties, Montana's population grew slower than the national rate. Since 1970, however, Census Bureau population estimates for Montana indicate that more individuals are coming into the state than leaving. This net inmigration is the reason why Montana's population has grown relatively faster than the national figure. This recent growth is presumably tied to the change in performance of Montana's economy. Other mountain states have also experienced similar growth patterns.

fig. 5
POPULATION OF MONTANA
AND THE U.S.

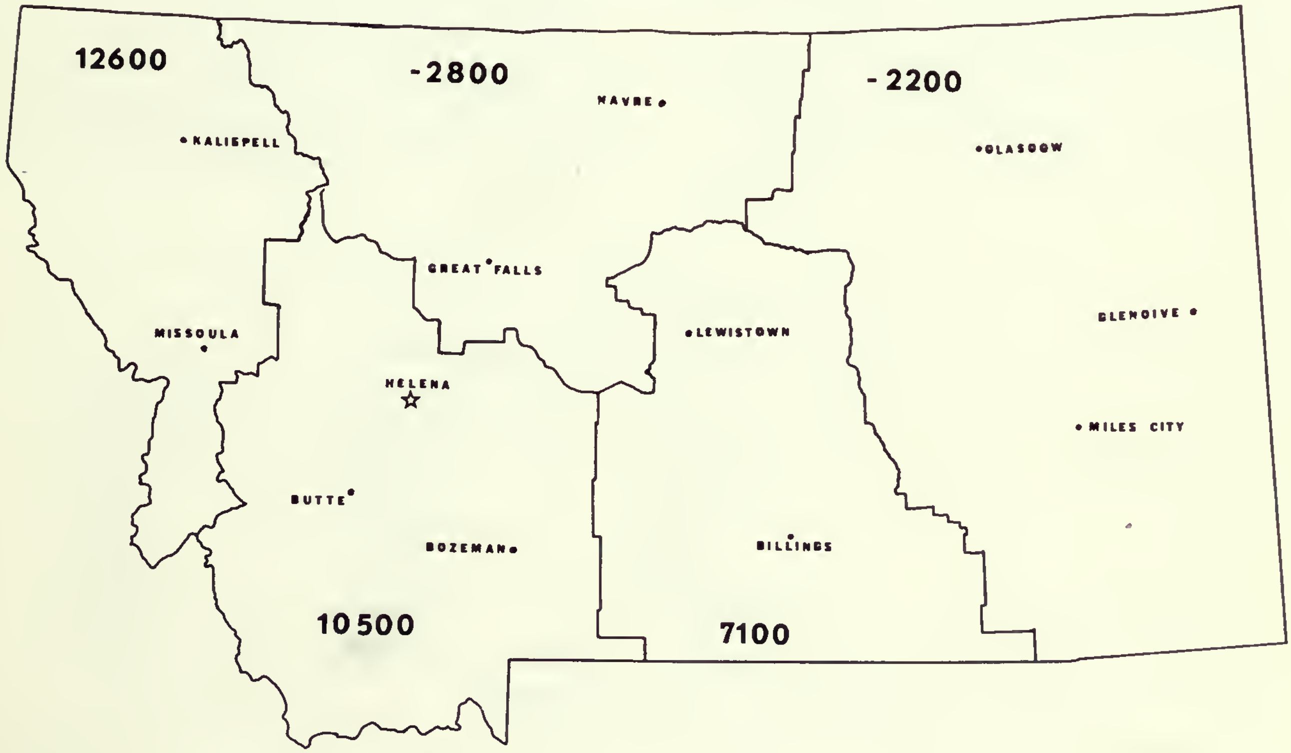


SOURCE: U.S. Census Bureau

Figure 6 explores the regional aspects of migration flows. All of western Montana has attracted people, while the dominantly agricultural areas continued to lose residents, slowly. The growth in the south-central part of the state is largely that of Billings. Overall, most of the movement has been toward the cities and more mountainous areas of the state.

fig. 6

NET MIGRATION FOR REGIONS IN MONTANA
1970 to 1975



SOURCE: U.S. Census Bureau

The data on which these conclusions are based must, however, be viewed with a certain amount of caution. Mid-decade estimates are not based upon an actual head count, and fairly serious errors were made by the Bureau of the Census in the 1960's. However, there is good reason to believe that the current estimates are not exaggerated, since the estimated population increases are reasonably consistent with other available economic data, which indicate net inmigration has occurred in the seventies.

# *THE INTERRELATIONSHIP BETWEEN INCOME, EMPLOYMENT AND POPULATION*

The reconciliation between income, employment, unemployment and population in any region is extremely difficult. For instance, increasing employment levels are no guarantee of reduced unemployment rates, because increases in employment opportunities can be more than offset by changes in the labor force, i.e., the number of people actively seeking employment. Typically, regions which have rapid employment (or population) growth also have relatively high unemployment rates as a result of greater competition for jobs. This increased competition may result from either inmigration or higher participation rates within the region.

The population effects of employment increases are equally difficult to analyze. The population change resulting from growth in the derivative sector is generally much lower than that resulting from an increase in basic activity. In Montana, many of the jobs within the derivative sectors have been filled by females and, as a result, migration effects were negligible. It is not surprising, then, that employment is currently growing much faster than population, as shown in Table 3. Even though many of these new jobs have been part-time and low paying, derivative growth has resulted in substantial increases in total income.

The relationship between population and income is very definitely a two-way road. The outmigration of the fifties and sixties kept per capita income levels for the remaining population higher than they would have been in the absence of migration. Of course, this migration was not without cost. Many young people who were eager to work in Montana went shopping for jobs elsewhere.

The situation is now reversed and census estimates, as well as several other sources, indicate a fairly high level of inmigration. Ironically, many of the individuals appear to be moving into areas of the state where unemployment is quite high.

Clearly, Montana's economy is in a constant state of flux, with many economic as well as environmental tradeoffs involved. The next section focuses on what can be expected for the next several years. Important issues for each of the major industries are considered.

**Table 3**

**MONTANA POPULATION AND EMPLOYMENT**

| Year | Population | Employment | FTE Adjusted Employment* |
|---|---|---|---|
| 1970 | 694,409 | 264,000 | 249,600 |
| 1971 | 709,400 | 272,500 | 253,900 |
| 1972 | 716,100 | 281,100 | 260,100 |
| 1973 | 729,800 | 294,400 | 275,800 |
| 1974 | 737,000 | 301,700 | 279,800 |
| 1975 | 747,500 | 305,200 | 279,200 |
| Percent Change (1970-75) | 7.6% | 15.6% | 11.9% |

SOURCES: U.S. Bureau of the Census; Montana Department of Labor and Industry, Employment Security Division

*NOTE: The employment data are expressed in full time equivalents (FTE's), i.e., adjusted for part-time employment.

# *A CLOSER LOOK AT THE MAJOR INDUSTRIES*

The following discussion takes a closer look at Montana's most important economic sectors. In the agricultural, wood products, and oil and gas sections, individuals familiar with these industries were asked to comment on recent trends and to speculate about the future of their respective sectors. In addition, several authors commented on possible policy measures which, in their view, could be undertaken by Montana state government to improve industrial strength in Montana. These industry descriptions are followed by a review of the travel industry and an analysis of state and local government employment and revenue growth.

# AGRICULTURE AND MONTANA'S ECONOMY

PROFESSOR RICHARD MCCONNEN
*Chairman,* Department of Agricultural Economics and Economics
Montana State University
Bozeman, Montana

In the past eight years, the economic size of Montana's agriculture has increased significantly. Its cash receipts more than doubled since 1968. If we are to understand the economic future of Montana, three questions must be answered with regards to its agriculture; 1) What caused the recent economic growth in Montana's agriculture? 2) What's likely to happen in the future? and, 3) What kind of agricultural policies on the part of the State of Montana would be likely to improve that future?

While Montana's agriculture has generally experienced greater prosperity in the early 1970's than in the 1960's, the blessings have been mixed. Since 1973, cattle prices have been sharply lower, grain prices took a critical dip in 1976, locally low levels of precipitation occurred in some years and production costs have increased at least twice as fast as the general rate of inflation. These facts have caused great economic hardship for some producers and for nearly all ranchers who depended primarily on cattle. Grain producers joined this list in 1976. The increase in the general level of agricultural prosperity in the early 1970's was largely due to increased production and better grain prices.

Most of the factors causing this increase in production have resulted in what are probably permanent increases in the capacity of Montana's agriculture to produce. However, this may not be true for one factor. Despite local droughts, weather conditions were generally very favorable with record annual precipitations recorded for many sites in Montana. We have no evidence of any permanent changes in weather conditions and over the long run, we must expect weather conditions to "average out." We can predict that individual farmers and ranchers, agribusiness (in fact, business in general) as well as state and local governments will have to face the implications of decreased agricultural production caused by unfavorable weather conditions.

Since we cannot prevent such occurrences, we must concentrate on mitigating their impact. Providing for supplemental sources of credit in cooperation with existing agricultural credit institutions, expanded irrigated acreage based on economic feasibility, better information about suitable production methods, provisions for emergency tax relief if such relief is required, and other such policies can be steps in the right direction to mitigate the impact of adverse weather that will certainly occur sometime in the future.

Grain prices improved between 1970 and 1975 primarily because of higher demand for U.S. grain in the international market. There have been three principal reasons for this increased demand. First, world demand for grain increased because more countries could afford to buy more grain, world population increases played a secondary role. Second, the demand for U.S. wheat increased because the U.S. dollar was devalued and our agricultural goods became relatively better buys for many foreign customers. Third, Western Wheat and Great Plains Wheat, both supported by Montana grain producers through the Montana Wheat Research and Marketing Committee in cooperation with the United States Department of Agriculture, created new and expanded markets for wheat.

While increased feed grain prices have contributed to downward pressure on feeder cattle prices during the past few years, the principal cause for weaker beef prices has been high cattle numbers. The cattle cycle (each lasting about ten years) has been with us since at least 1900. However, much of the increase in the beef supply during the past quarter of a century has come about because of relatively cheap grain. There was an increase in both the length of the feeding period and the number of cattle on feed. Cattle on feed increased from around 4 million twenty five years ago, to 14 million head in 1973. As more younger cattle went into the feedlots, more pasture was available for breeding stock and this contributed to a dramatic expansion of the U.S. cow herd.

While the world demand for agriculural products will continue to increase, so will the world's ability to produce food. The prosperity of Montana's agriculture in the future, as in the past, will depend on its competitive strength. The abilities of Montana's farmers and ranchers, the vigor of its agribusiness community, and the environment established by state and local government will all influence that competitive strength. These items along with three major economic forces and the uncertainty of weather will largely determine what the next few years hold for Montana's agriculture.

The first of these economic forces relates to the price of grain. Between 1963 and 1971, U.S. wheat production was usually 1.3 billion bushels or less. Exports between 1963 and 1971 were between 500 and 800 million bushels. Over half of the exports resulted from various government subsidy programs. Domestic use for food and feed was around 600-800 million bushels. Carryover stocks on 1 July were usually in excess of 800 million bushels and reached 1.3 billion bushels in 1962. Most of this inventory was government controlled. Regardless of how well they are handled, high inventories mean lower grain prices to producers. In 1974, 1 July carryover stocks plunged to 250 million bushels. Not surprisingly, prices for the 1973 crop were high. Carryover stocks have been building up since that time. The carryover on 1 July, 1977 will probably exceed 800 million bushels and could conceivably reach 1 billion bushels. Wheat prices dropped sharply in 1976 because of these developments. Barring some combination of (1) dramatic decreases in U.S. production, (2) significant increases in export sales (increasing from around 1 billion to at least 1.5 billion bushels) and (3) higher federal federal loan rates for wheat, prices are not likely to strengthen significantly during the next few years. In fact, if unfavorable federal farm legislation were passed in 1977, wheat prices would probably become even lower than they are now. The prospect of grain prices remaining at near present levels and perhaps even decreasing does not bode well for either Montana wheat producers or the rest of the state's economy.

The second economic force relates to beef prices. While there are clouds on the horizon, the price outlook for the next several years is more optimistic than for wheat. We're still seeing a reduction in U.S. cattle numbers and unless this cattle cycle is dramatically different from its predecessors, this means stronger cattle prices in the near future. However, price recovery has not been as strong as most of the experts predicted. Consumer demand has remained strong, but widely fluctuating feeding margins have provided more risk than cattle feeders preferred and the demand for feeder cattle has not been strong. High slaughter levels, including the slaughter of many grass fed cattle, has meant high levels of beef supply at the retail level. Beef imports, even though some have argued they are desirable from a broad social point of view, have resulted in lower prices to Montana's ranchers. The 2 billion pounds of beef imported into the U.S. during the past year have lowered producer prices. Preliminary estimates indicate that imports of an added one hundred million pounds of beef at the margin will lower the price by at least 38-40 cents per hundredweight to the producers of Montana feeder cattle.

The third set of economic forces relates to the impact of inflation on Montana agriculture. In the recent past, costs of agricultural production increased at about twice the rate of the Consumer Price Index. Even inflation rates as low as 6 percent would mean a dramatic intensification of the cost-prize squeeze in as little as two years. General inflation rates of 10 and 12 percent would mean intolerable cost increases for Montana agriculture. And the costs of production, unlike prices received, seem to move in one direction only. Closely allied to this problem is the impact of inflation on regulated freight rates. Under the present regulatory procedures, we need more competing modes of transportation is transportation costs are to decrease. High transportation costs tend to isolate Montana's agricultural products from markets. We need at least enough in-state processing to help producers get a competitive price for their products.

The uncertainty associated with weather conditions has already been mentioned. Montana has always been a great "next year" country. But the optimism of Montana's citizens should not blind the agricultural, business, and political leaders to the likely impact of adverse weather conditions on Montana's agriculture.

Alternative levels of cash receipts for the next two years from farm and ranch marketings are presented in Table 4 below. The "best" total figure ($1,373,000,000) is 160% of the "worst" total figure ($856,000,000). It wasn't until 1972 that cash receipts exceeded the $856,000,000 figure. The cash receipts for 1973 were 214 percent of the cash receipts for 1968. At least the total figures, if not each component, represent occurrences well within the range of our recent experience. Cash receipts outside of the range represented by the "best" and "worst" could occur, but are not likely during the next two years unless we have a severe drought which is statewide, an expected collapse of markets, or extremely high prices caused by some widespread crop failures in the rest of the world.

### Table 4

### ALTERNATIVE LEVELS OF CASH RECEIPTS FOR MONTANA AGRICULTURE DURING LATE 1970'S

**Millions of Dollars**

| | Strong Markets & Good Weather Conditions | Strong Markets & Normal Weather Conditions | Weather Markets & Normal Weather Conditions | Weaker Markets & Unfavorable Conditions |
|---|---|---|---|---|
| Cattle & Calves | $459 | $468 | $408 | $384 |
| Wheat & Barley | $672 | $552 | $420 | $344 |
| Other | $206 | $180 | $146 | $128 |
| Total | $1,373 | $1,200 | $974 | $856 |

There are three general categories of approaches that the Legislature and Executive Branch can use to enhance the prosperity of Montana agriculture and thereby improve the economic environment for all the citizens of Montana. They can (1) influence national and regional political and business policies in ways which are favorable to Montana, (2) make specific public investments which will improve the competitive strength of Montana agriculture, and (3) develop favorable state policies which deal with the interface between the private sector and state and local government agencies.

The current federal law regarding agricultural policy will expire this year. Discussions have alreeady begun on the type of new legislation that will be in force after the 1977 crop year is ended. Montana farm producers must have an opportunity to learn about the alternatives they face and then be able to express their preferences effectively. While many other national and regional policies are important, the current agricultural policy debate in the U.S. Congress is probably the most important single issue to be resolved. In terms of economic importance to Montana, more reasonable levels of meat import is of nearly equal importance.

If U.S. food policy continues to follow the twin themes of cheap food and maximum export earnings, Montana producers along with the rest of the producers in the U.S. will continue to be among the principal victims of the greatly increased price uncertainty which results. If this continues, the list of victims will grow as our capacity to produce shrinks as the result of a slowdown of investment in agriculture. The new agricultural policies must give the Montana farmer and rancher at least a reasonable chance of paying his costs of production (including his property taxes), retaining enough money so that he can support his family at an acceptable level, and hopefully earning a decent return on his investment.

Carefully planned investment of public funds can improve the competitive strength of Montana's agriculture. The benefits of these investments will not be restricted to agriculture, but will result in benefits to the entire economy of Montana. Examples of some opportunities could include increased support of research and education in the areas of animal diseases, genetics, crop and rangeland management, and managerial skills.

The opportunities for the profitable investment of public funds mentioned above will not succeed by themselves. Their success must be based on the decisions of thousands of Montana farmers and ranchers. These public investments are aimed at providing farmers and ranchers with more profitable alternatives. But Montana's agricultural producers will not be the only ones to benefit. The economy of the entire state will benefit. Proper action by state and local government are required if we are all to realize the full economic potential of Montana's agriculture.

# THE WOOD PRODUCTS INDUSTRY IN MONTANA

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The wood products industry is concentrated in western Montana, where it is of overwhelming importance. The industry is the area's economic barometer. The western counties prosper when the forest industries are doing well. When the timber industry is in trouble, western Montana is in economic trouble.

A 1972 report estimated that approximately 43 percent of total employment and 51 percent of total personal income in eight western Montana counties id directly or indirectly dependent upon the wood products industry, including pulp and paper. For the state as a whole, the estimates are considerably smaller: 12 percent for employment and 11 percent for income.[1] Forest activities provide relatively high-paying jobs in a state and area (western Montana) where per capita incomes are low.

Statewide industry employment reached a high point in 1973, when 10,187 persons were at work in logging camps, sawmills, plywood and particle board plants, millwork and miscellaneous activities, and the pulp and paper mill.

Employment began to decline in 1974 and continued low through 1975, in response to the recession and the sharp decline in housing construction.[2] Lumber and plywood production fell off dramatically; 1975 lumber output was 28 percent below 1973 and the lowest since 1960.[3] The paper market decline in 1975 resulted in temporary shutdowns at the Missoula mill. Average annual employment in the combined forest industries fell off by about 14 percent between 1973 and 1975. At the same time, the average number of hours worked per week was reduced from 41 in 1973 to 36 in 1976. Even so, the unemployment rate in 1975 averaged about 11 percent in the Missoula area (Missoula, Sanders, Mineral and Ravalli counties) and 13 percent in the Kalispell area (Flathead, Lincoln and Lake counties).[4] It is worth noting that without the diversification which has taken place in the industry during recent years, which lessened the dependence on lumber production, things could have been much worse.

The first half of 1976 saw some improvement in the industry. United States housing starts were approximately 40 percent above January-June 1975.[5] The paper market showed improvement. Industry employment in the state through May (no later figures are available) averaged about 10 percent above the first five months of 1975, but it was still well below comparable periods in 1973 and 1974.[6]

Most experts expect housing to continue to pick up—although slowly—through the remainder of 1976 and in 1977. One projection puts 1976 starts at 36 percent over 1975 and anticipates a 14 percent increase for 1977, with the expansion leveling off during the latter half of that year.[7] Once lumber and plywood inventories are worked off, further increases in production should occur. The paper market also is expected to continue to improve.

Under normal conditions we might expect the recovery to continue, at least through 1977. But normal is not the name of the game; the Montana industry faces uncertainty from another quarter—recent court decisions which may affect the availaible timber supply.

Two U.S. District Court decisions in recent months have declared the practice of clearcutting timber on public lands to be illegal under the 1897 Organic Act. The decisions further stated that under the Act trees sold for harvest by the Forest Service must be large, physiologically mature, or dead and that they must be individually marked for cutting.

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[1] Johnson, Maxine C., "Wood Products in Montana: S Special Report on the Industry's Impact on Montana's Income and Employment," Montana Business Quarterly, Spring 1972.

[2] Montana Department of Labor and Industry, Employment Security Division.

[3] Western Wood Products Association, 1975 Statistical Yearbook.

[4] Montana Department of Labor and Industry, Employment Security Division.

[5] U.S. Department of Commerce.

[6] Montana Department of Labor and Industry, Employment Security Division.

[7] Lionel D. Edie & Company.

A third decision, by a U.S. District Court in Texas, states that the Multiple Use Sustained Yield Act of 1960 also prohibits clearcutting. At the time of the latter decision, Congress was in the process of debating amendments to the Organic Act; there may not be time to also amend the Multiple Use Act this year. Furthermore, it is not yet clear how far Congress will go in prescribing and restricting timber harvesting methods.

The U.S. Forest Service estimates that timber cut from the national forests could be reduced by 75 percent nationwide for a decade if the court decisions were enforced, and by 50 percent after that. The decisions are particularly threatening in Montana, where approximately one-half of the timber supply comes from federal lands.

The resolution of the timber harvest debate will be made in the national political arena by the U.S. Congress. Montanans should recognize that the possibility of serious curtailment of a major state export industry does exist. It could be temporary, while a solution is worked out, or long term, depending upon what legislation is finally passed. We have grown accustomed to public debate on Forest Service timber management and to industry's "viewing with alarm" various policy changes. But both the Forest Service and the industry agree that these recent court decision could seriously affect the Montana forest industries, if Congress does not come up with the new legislation that permits clearcutting where it is an appropriate management technique.

Let us assume that a reasonable compromise as to clearcutting and timber sales on public lands can be achieved, and speculate as to what changes may occur in the Montana forest industry over the next five or ten years. I expect to see fewer firms, with less emphasis on lumber and plywood and more production of products such as particleboard, new structural products made of chips, and pulp and paper. I expect more integrated firms producing a combination of products utilizing both sawtimber and residuals. A better use of the entire wood resource can help maintain the industry as an important contributor to Montana's economic welfare and is essential to its survival.

# *THE MINING INDUSTRY*

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## *Coal*

Montana's production of coal by large surface mines has increased dramatically over the last few years, and additional increases can be expected in the future.

Current producers of large tonnages of coal are the Western Energy Company, a wholly owned subsidiary of Montana Power Company, mining at Colstrip in two separate operations; Peabody Coal Company, also mining near Colstrip; Westmoreland Resources Company, at Sarpy Creek; Decker Coal Company, with a mine at Decker; and Knife River Coal Mining Company, producing lignite near Savage. All of these producers mine subbituminous coal except the Knife River Coal Mining Company. The 1974 and 1975 production from these mining operations is listed in Table 5.

**Table 5**

**PRODUCTION FROM THE FIVE MAJOR STRIP MINES IN MONTANA**

| Company | Production, in Tons<br>1975 | 1974 |
|---|---|---|
| Western Energy (Colstrip) | 6,400,000 | 3,212,000 |
| Peabody (Colstrip) | 2,100,846 | 2,228,525 |
| Decker | 9,200,000 | 6,800,000 |
| Knife River[1] | 300,051 | 329,588 |
| Westmoreland | 4,048,082 | 1,457,755 |
| Total | 22,048,979 | 14,027,868 |

[1] Knife River mines lignite for local use.

Increases in coal production can be achieved by increased production from existing mines and by opening new ones. All of the existing subbituminous mines have capacity to expand, and it is expected that production from these mines will be greater in 1976 than in 1975. In addition, two or possibly three new large surface mines are being planned. Two of these are by Peter Kiewit Sons' Company, a partner in the existing Decker mining operation with Pacific Power and Light Company. Both of these mines are under development. One borders the existing Decker mine to the north, called the North Extension, and the other is directly east and adjacent to the Tongue River Reservoir east of the Decker mine. The East Decker mine is projected to reach a production 6,600,000 tons and have employment for about 250 persons. The North Extension will have lesser production, a maximium of 3,000,000 tons per year.

A third mine, proposed by Shell Oil Company, has been planned on the southeastern corner of the Crow Indian Reservation at Young's Creek, but plans have been delayed by action of the Crow Indian Tribal Council. This mine's initial production was to be 2,000,000 tons per year, increasing to 8,000,000 tons per year by the tenth year of production with employment at that time being 208.

Plans for new mines may now proceed on a more orderly basis, as the federal government is in the process of preparing additional lands for competitive coal leasing. This action is particularly important in Montana where the coal ownership is split between the federal government, the State of Montana, and private ownership.

The lignite mined by Knife River Coal Mining Company at Savage is shipped to Sidney to be utilized by Montana-Dakota Utilities Company. Except for the coal mined at Colstrip and burned by the Montana Power Company there and in its Corette plant at Billings, all of the subbituminous coal is being shipped by rail to midwestern utilities. These markets are expected to continue to expand since, in the near term, burning of low-sulphur coal offers the best way for utilities to meet the air-emission standards.

## *Copper and Other Mining*

Copper now accounts for the major part of income from Montana's metals and nonmetals, although other commodities such as iron, manganese, talc, lead and zinc, and previous metals will no doubt contribute larger amounts in the next several decades than at present.

Employment trends and employment prospects are encouraging for metal and nonmetal resources. Several copper deposits and one or more gold deposits may be developed and mined by open-pit methods if metal prices remain stable or increase. Future development and production and consequent employment in open-pit and underground mining of Montana's iron deposits are believed to be very good.

Development of copper and zinc reserves in the Butte district by block caving may begin within the next 10 years, thereby increasing employment for Silver Bow County. Other increased employment may come about by reactivating phosphate mining and processing in western Montana, discovery of new talc, silica, and vermiculite deposits, and the increased production of building stone and expandable shale and clay.

The greater percentage of income from metallic mineral production within Montana has come from the Anaconda Company's Berkeley pit and underground mines of the Butte district, but underground production of copper and other base and precious metals ceased late in 1975. The Anaconda Company will continue to produce from open pits, but underground mining of Butte veins as practiced prior to 1975 will probably never resume. About 52,000 tons of ore per day is mined from the Berkeley pit, and the Black Pine (Inspiration Copper) mine near Philipsburg produces 250 to 300 tpd of silver-lead-silica ore used as a flux at the Anaconda smelter.

The U.S. Bureau of Mines reports that Montana's 1974 metallic and nonmetallic mineral production was valued at 276 million dollars, a 29 percent increase over 1973. Metals that showed significant increases in value over the previous year were gold, silver, and copper. Smaller increases were reported for zinc and lead. Nonmetallic mineral production remained the same, although value increases are reported for clay, stone, talc, phosphate rock, lime and gemstrones. The value of sand and gravel production decreased 20 percent.

Montana's metallic and nonmetallic mineral production for 1975 was valued at 202 million dollars, a decrease of 27 percent from the 1974 value. The value loss is attributed to the decline in copper and silver values (36 percent), and gold values (35 percent), which was not entirely offset by value increases for phosphate rock, talc and stone.

## *Mineral Prices*

In mid-1973 copper was quoted at 60 cents a pound, and by September 1974 had risen to 86 cents a pound. Between March and December 1974 the price ranged between 60 and 65 cents per pound. From April 15 to May 20, 1976, copper prices ranged between 66 and 70 cents. The demand for copper seems to be firm, and the price should remain about 75 cents or possibly increase a few cents per pound during 1976, provided the demand remains good. Because of weak demand for copper during 1975, however, large stockpiles were built up by the copper producers.

Gold prices have fallen considerably from $162.85 in August 1975 to $123.30 per ounce (July 1976). Lead and zinc prices have been relatively stable over the last three years. Silver has been more erratic and has ranged from $3.89 to $5.02 in 1976.

## *Future Development and Production Potential*

Large reserves of manganese at Philipsburg and Butte have a reasonable chance of being developed in the future. A large zinc ore reserve is present in the Butte district, and if zinc prices remain stable or increase, the possibility of producing zinc ore (none is being mined now) is considerably enhanced. Within the last few years Anaconda Company geologists have become aware of a copper-silver-molybdenite deposit within the central Butte district. The cupola-like part of this ore body is about 3,000 feet below surface; therefore, a block-caving method to mine this deposit is being contemplated. This deposit is estimated to contain several hundred million tons of ore higher in grade than present Berkeley pit ore, but it will not be mined until those ore reserves are exhausted (about 12 years). The development and production of this deposit will increase employment for Silver Bow County. Other deposits that may be developed to produce in the near future include the Spar Lake copper deposit near Troy, the Anaconda copper property at Lincoln, the copper-chromium-iron deposit in the Stillwater Complex, the Golden Sunlight deposit at Whitehall (gold), and the German Gulch deposit near Anaconda (gold).

Exploration for talc deposits is active in Madison and Beaverhead counties, and it is believed that additional deposits will be discovered in these areas. The Pony vermiculite deposit is being purchased by a major company, and ore reserves may be sufficient to encourage development and production. Other commodities that are being produced in Montana include silica, building stone, and expanded shale.

# THE OIL AND GAS INDUSTRY

DON ALLEN
The Montana Petroleum Association

## Crude Oil in Montana

Montana's crude oil production slipped from 34,533,962 barrels in 1974 to 32,850,749 barrels in 1975. During this same time, because the regulated price has been allowed to move upward and despite the late minimum effect of the rollback included in the energy legislation passed in late 1975, the value of the crude oil produced in 1975 grew to 257,086,151 over 236,698,022 in 1974. The average yield per well was down significantly, but the total decrease in production was minimized by the large increase in the number of wells.

Montana's proved reserves, as of December 31, 1975 were estimated to be 164 million barrels.

There are many factors that will determine future reserves and production in the state:

- The price at the wellhead allowed by Congress.
- The extent of additional secondary and tertiary recovery in known fields (such as the experiment now being conducted on the Bell Creek field. This type activity will greatly depend on allowable price.)
- The outcome of pending federal tax legislation.
- Legislation which would either encourage or discourage further exploration in Montana versus other states.
- The extent of allowed exploration on U.S. Forest Land and state lands.

The economic impact of oil production in the state is significant—amounting to over 18.8 million dollars for the fiscal year 1974-75. In looking at the future potential impact of possible increases allowed to be paid for crude oil, it is noteworthy that the property tax on net proceeds from oil and gas production and oil field equipment almost doubled from fiscal year 1974-75 to fiscal year 1975-76.

## Refining

Montana's seven refineries play a key role in the state's economy.

The three refineries in the Billings area—Continental Oil Co. and Exxon in Billings, and Farmer's Union in Laurel, account for over 88% of the refining capacity in Montana. The other four refineries, Big West Oil and Kevin, Phillips Petroleum at Great Falls, Tesoro at Wolf Point, and Westco at Cut Bank make up the total throughput capacity of 157,431 barrels per day. In 1975, the refineries processed an average of 83.% capacity per day.

It is imperative that a new source of crude supply be arranged for Montana's refineries by 1978, since the scheduled reduction in Canadian exports (which will expire entirely by the end of 1981) will have cut the supply from that source in two years to a lvel that would cause serious cutbacks in the crude supply needed to run the state's refineries.

The seven refineries provide jobs for about 1,300 people with annual payrolls in excess of $20 million and a total of almost $4 million in various taxes paid each year.

## Natural Gas

Natural gas production of 43,622,602 Mcf for 1975 represents a 6,769,065 Mcf decrease from 50,391,667 Mcf shown for 1974. This is largely due to the duplicate inclusion of storage gas at Cedar Creek Field into the reported produced from seven additional areas in 1975 that were not on stream in 1974; including Bears Den Field in Liberty County, Brown's Coulee and Coal Coulee in Hill County, North Clark's Fork and South Clark's Fork in Carbon County, Pumpkin Creek in Custer County, and Strawberry Creek in Toole County.

The dominant interest in the shallow gas producing sands of northern Montana and oil bearing Tyler sands of central Montana is expected to continue in 1976, along with possible increase in exploratory drilling for deeper reservoirs in the Williston Basin area of northeastern

Montana. Recent major discoveries in Wyoming and existing production in the same formation in Canada have resulted in a significant renewed interest in the overthrust belt area of Montana.

Depending on how some major issues such as access to federal and state land, grizzly habitat, and the price of gas are resolved, the future development of this area could prove a vital source of badly needed new gas supplies to offset dwindling supplies from Canada and depletion of existing wells.

In view of total gas reserves of only 760,262 million cubic feet, it is critical to the operation of some industries such as wood products, and the overall health of Montana's economy to obtain new sources of natural gas.

# *TRAVEL*

No review of Montana's industries would be complete without a discussion of the importance of tourism and travel. Unfortunately, employment and income data are gathered in such a way that reliable information on this sector is extremely limited. Service and trade sector data are reported by type of economic activity, and not by the type of customers served. For example, a restaurant serves both instate as well as out-of-state residents, so it is difficult to determine whether the employment and income generated by such a firm is primary (serving non-residents) or derivative (serving the local economy). Receipts or expenditure estimates are, however, produced by the Montana Travel Promotion Unit of the Department of Highways. This information and an estimate of income generated by each sales dollar implies that the overall travel industry generates approximately 13,000 full and part-time jobs and about 80 million dollars in income. Table 6 provides a basis of comparison illustrating the importance of this industry.

**Table 6**

**BASIC INDUSTRIES IN MONTANA (1974)**

| INDUSTRY | PERCENT OF TOTAL INCOME |
|---|---|
| Agriculture | 14.4% |
| Federal Government | 6.5% |
| Wood Products | 3.0% |
| Mining | 2.6% |
| Rail Transportation | 2.5% |
| Travel Industry | 2.2% |
| Other Manufacturing | 1.4% |
| Primary Metals | 1.2% |
| Food Products | 1.1% |
| Refining | 0.6% |

The data provided by the Travel Promotion Unit also indicate that substantial expenditure increases have occurred in the last few years. As national income and leisure time rise, it is likely that this industry will experience substantial growth, particularly in light of the spectacular natural attractions found in Montana. Natural beauty, a colorful past and effectiveness of the Travel Promotion unit have no doubt been also responsible for the recent upsurge in interest in major film production in Montana.

# *GOVERNMENT*

## *Employment*

State and local government employment in Montana and the nation has increased steadily over the last few years. In general, the rate of increase has, however, slowed somewhat from earlier periods. This growth has not been unique to Montana and was largely the result of the shift in the composition of employment which was discussed earlier. The derivative sector, of which state and local governmen is a part, currently provides numerous new services in addition to many which used to be provided in the home. The point is not to argue the pros and cons of this shift, but merely to suggest that government growth is part of a much larger national economic and social change, in which Montana shares. Tables 7 and 8 provide several yardsticks with which to compare government growth.

## Table 7

## POPULATION, STATE AND LOCAL GOVERNMENT EMPLOYMENT CHANGE IN MONTANA AND THE U.S.A.

## (1965-1975)

| | Percent Change (1965-1970) | Percent Change (1970-1975) |
|---|---|---|
| State Government Employment | | |
| Montana | 32.8% | 20.5% |
| United States | 31.4% | 19.1% |
| Local Government Employment | | |
| Montana | 5.8% | 28.1% |
| United States | 20.1% | 18.4% |
| Population | | |
| Montana | —1.7% | 7.8% |
| United States | 4.8% | 4.8% |

NOTE: Employment data are expressed in terms of full-time equivalent.
SOURCES: Public Employment, U.S. Department of Commerce
Census, U.S. Department of Commerce

Comparisons of growth rates can either be informative or misleading. When analyzing the growth of state or local government employment, the best standard of comparison is probably population growth. As population grows, the demand for public services will also increase. This comparison is more meaningful than a comparison of government with private sector employment, since the latter changes over the course of a business cycle. In addition, a substantial amount of private sector growth has been of a part-time nature, while relatively fewer part-time positions exist in government. Once again, this makes comparisons difficult.

In Montana, state government employment has grown at approximately the national rate since 1965. Since 1970, however, Montana increases have been more consistent with population growth. On the other hand, growth of local government employment since 1970 has been substantially higher than the national average.

In per capita terms the situation is somewhat different. Presently, the per capita employment of state government is comparatively high, while per capita employment of local government in Montana is close to the national norm. For example, in 1975, at state government level, there were 204 state employees for every 10,000 residents, compared to the national average of 129 employees. At the local level, there were 347 employees per 10,000 residents in Montana, compared to 352 employees nationally. Part of the difference in state government concentration, which has existed for years, is related to Montana's low population, rural nature, and large land area. Other states with similar characteristics also have higher than average government employment per capita. State government expenditures per capita, however, do not vary nearly as much as employment per capita. But once again, the less populated states tend to have somewhat higher state per capita expenditures.

## Table 8

## THE RELATIVE SIZE OF STATE AND LOCAL GOVERNMENTS IN SELECTED STATES.

| STATE | POPULATION | FULL TIME EQUIVALENT OF GOVERNMENT EMPLOYMENT PER 10,000 POPULATION | | PER CAPITA GOVERNMENT EXPENDITURES FOR FISCAL YEAR 1974 | |
|---|---|---|---|---|---|
| | | STATE | LOCAL | STATE ($) | LOCAL ($) |
| CALIFORNIA | 21,185,000 | 103 | 393 | 326 | 795 |
| NEW YORK | 18,120,000 | 104 | 431 | 343 | 1106 |
| MICHIGAN | 9,157,000 | 120 | 350 | 398 | 630 |
| NORTH CAROLINA | 5,451,000 | 147 | 296 | 265 | 418 |
| MARYLAND | 4,098,000 | 165 | 331 | 376 | 680 |
| OKLAHOMA | 2,172,000 | 166 | 314 | 388 | 393 |
| OREGON | 2,288,000 | 169 | 353 | 419 | 576 |
| NEBRASKA | 1,546,000 | 170 | 393 | 320 | 507 |
| IDAHO | 820,000 | 182 | 326 | 404 | 417 |
| MONTANA | 748,000 | 204 | 352 | 423 | 473 |
| SOUTH DAKOTA | 683,000 | 169 | 312 | 431 | 438 |
| NORTH DAKOTA | 635,000 | 168 | 299 | 465 | 421 |
| DELAWARE | 579,000 | 244 | 288 | 573 | 475 |
| WYOMING | 374,000 | 208 | 420 | 487 | 610 |
| ALASKA | 352,000 | 379 | 343 | 1522 | 950 |
| UNITED STATES | 213,121,000 | 129 | 347 | 350 | 590 |

SOURCE: Public Employment, Governmental Finances; U.S. Department of Commerce, Bureau of the Census

## *Revenue*

The other side of the state and local government growth is revenue. As Table 9 shows, the pattern of tax revenue from different sources has changed considerably over the last ten years. All sources have grown but the income tax has doubled as a revenue source for state and local government. Property tax has declined slightly in percentage terms.

### Table 9

### MONTANA STATE AND LOCAL REVENUE BY SOURCE

| | 1965 | | 1975 | |
|---|---|---|---|---|
| | **Total Revenue in Millions of Dollars** | **Percent of Total** | **Total Revenue in Millions of Dollars** | **Percent of Total** |
| Property taxes | 108.5 | 59.4 | 232.3 | 51.0 |
| Sales taxes* | 35.6 | 19.5 | 69.6 | 15.3 |
| Income taxes | 22.5 | 12.3 | 111.7 | 24.5 |
| License taxes | 10.7 | 5.9 | 21.3 | 4.7 |
| Miscellaneous taxes | 5.4 | 3.0 | 20.6 | 4.5 |
| TOTAL | 182.7 | 100.0 | 455.5 | 100.0 |

*NOTE: This category includes motor fuel, beverage and tobacco taxes, etc.

SOURCE: Montana Property Taxation 1976, Montana Taxpayers Association.

This shift is consistent with a national trend away from property taxes to income taxes as the ultimate source of revenue for state and local governments. Not only have direct tax revenues shifted to income taxes, but also state and local government have utilized more intergovernmental revenue whose original source was income tax, i.e., revenue sharing. Nationally, local governments have found that taxable valuation has not grown as fast as the cost of governmental services. The income tax, on the other hand, because of the progressive rate structure, has grown faster than inflation. Table 10 shows the differences in average annual growth rates among these variables. By increasing mill levies, governments have raised property taxes faster than the general price level, but income taxes have grown much faster.

A second reason for this shift is that income taxes are perceived as more equitable than property taxes. Notably, Montana has not followed the national trend to greater sales taxes—a source of revenue considered to be among the most regressive.

The issue of revenue estimates, particularly personal income tax collections, is both important and controversial. Revenue estimates are strongly affected by the level of inflation, as well as the general level of agricultural activity.

### Table 10
### AVERAGE ANNUAL GROWTH RATES, MONTANA
### (Fiscal Year 1965-66 - Fiscal Year 1974-75)

| | Percent Change |
|---|---|
| Personal Income Tax Revenue | 19.0% |
| Personal Income | 9.0% |
| Consumer Price Index | 5.3% |
| Taxable Valuation | 4.7% |
| Property Taxes | 8.0% |

SOURCES: Montana Property Taxation 1976, Montana Taxpayers Association
Montana Department of Revenue
Bureau of Economic Research

# *A LOOK AT THE FUTURE*

The preceding sections have discussed Montana's recent past and prospects for the short-term future. Making statements about the more distant future is an even more hazardous occupation. An economist in 1965 looking at the relative stagnation of the state would hardly have predicted net inmigration in the early seventies. Any overall projection of population and employment is really the result of specific assumptions about different industries. If an economist misses badly on the important basic sectors, the corresponding population projections will be in error. The Bureau of Business and Economic Research at the University of Montana recently issued an excellent review of past projections which were corrected for some of the obvious mistakes in coal mining employment.[8] The purpose of this section is to provide a new set of projections that are based on more current economic information and compare them withpast work.

The new projections are the result of an economic modeling effort (the Montana Futures Process) undertaken in the last year by Montana state government. The model represents a systematic study of the relationships among numerous variables within the Montana economy. Given various assumptions about the type and level of industrial development, the model produces an estimate of employment and population for future years.

At this point in time, one major uncertainty in the state's outlook is the level of coal production and energy conversion in the future. The Montana Energy Advisory Council has provided two levels of possible development for 1980 and 1985. The low scenario features 37.5 million tons of coal production for 1980 and 43.5 million tons for 1985. Coal conversion plants are Colstrip I-III for 1980, and Colstrip I-IV for 1985. The higher level of activity assumes that 56.5 million tons of coal will be mined in 1980 and 66.1 million tons in 1985. The high level of energy conversion includes Colstrip units I-IV in 1980, and for 1985 assumes phase one of the Circle West project as well as an additional 600 megawatts of electrical power.

Table 11 summarizes the employment and population effects of these two levels of energy-related developments and compares these projections with older sources. The interesting feature of the table is the great

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[8] Polzin, Paul E., "Employment Projections For Montana To 1985," Montana Business Quarterly, Winter 1976, pp. 17-24.

**Table 11**
**A COMPARISON OF FORECASTS**

| | **Predicted Level** | |
|---|---|---|
| **Employment 1975 level = 293,000** | **1980** | **1985** |
| OBERS 'E' | 277,200 | 280,900 |
| Montana Economic Study (1970) | 277,600 | N/A |
| NPA | 285,200 | 292,600 |
| Low Scenario (Montana Futures Process) | 331,259 | 355,666 |
| High Scenario (Montana Futures Process) | 333,041 | 358,142 |
| *Population (1975 level* = 747,500) | | |
| OBERS 'E' | 669,700 | 667,100 |
| Montana Economic Study (1970) | 725,000 | N/A |
| Low Scenario (Montana Futures Process) | 795,335 | 838,500 |
| High Scenario (Montana Futures Process) | 799,595 | 844,174 |

NOTE: [1] The OBERS, MES, and NPA employment figures were adjusted by Dr. Polzin in the previously cited article to be comparable. A description of these projections, including the adjustment technique, is found in the original article.

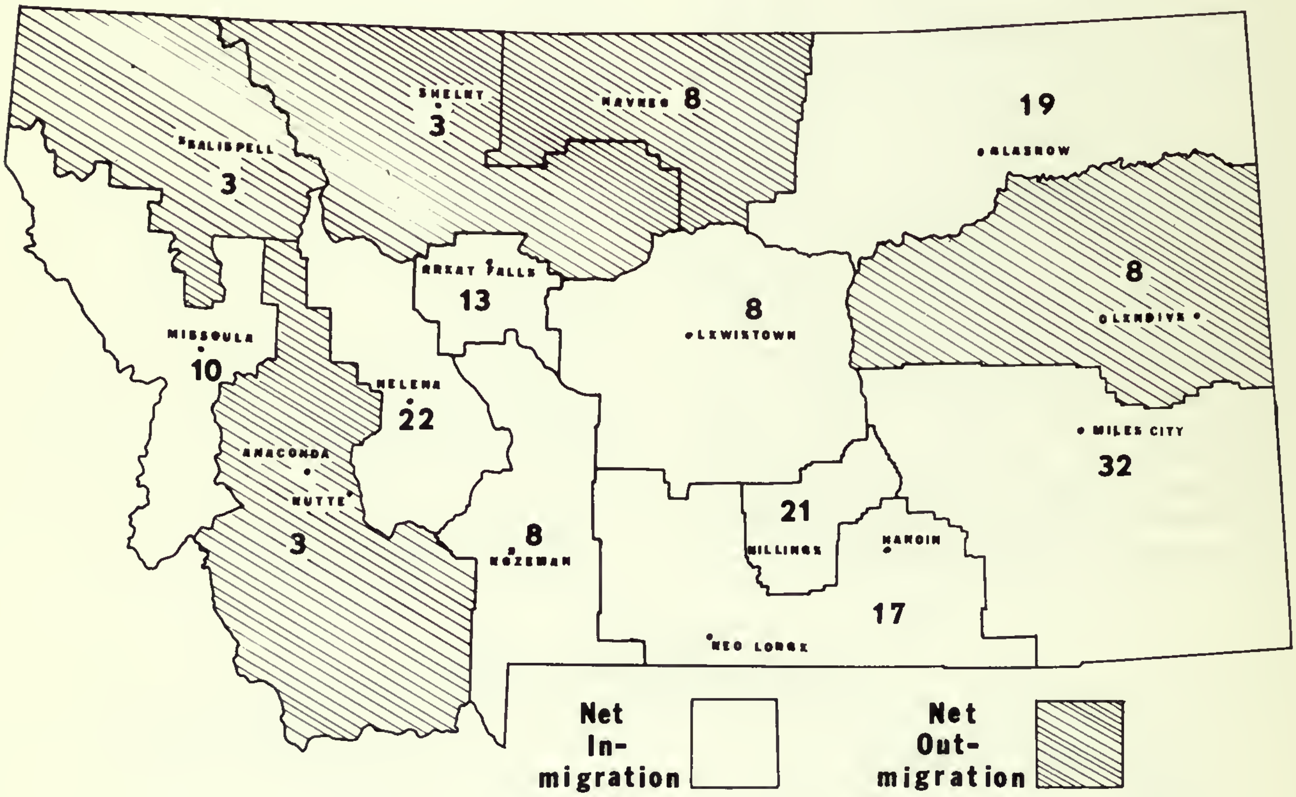
[2] All employment figures in the new set of projections have been adjusted to fit the census definition used in other studies. The new set of projections relies on Department of Commerce data where the employment definition and coverage varies slightly.

[3] OBERS refers to Office of Business Economics and Economic Research Service. NPA refers to National Planning Associates.

difference between the new set of projections and the past set. All of the previous studies failed to predict the great increase in derivative activity experienced within the last few years. The new projections are based on the most current data available on employment structure and population changes. As a result, the projections are higher and presumably more realistic.

Figure 7 explores the regional aspects of the growth under the low energy scenario for 1985. The percentages increase in population is given along with an indication of the direction of migration. This migration estimate is based on a comparison of the expected population with the number that would result from natural increase from 1975 to 1985, i.e., births minus deaths. In general, the urban and energy impacted areas will have net inmigration, the rural ones will continue to suffer net outmigration. Kalispell shows outmigration on the basis of economic consideration. However, in the past, its growth has not been totally explained by employment growth, either. So, if non-employment related inmigration continues, Kalispell may very well continue to experience net inmigration in the future.

fig. 7
PERCENTAGE CHANGE IN POPULATION
1975 to 1985



SOURCE: Montana Futures Process, Department of Community Affairs, Research Division.

The long-term outlook for Montana is roughly a continuation of the course it has taken over the last five years. Basic industries will grow very slowly, while derivative activity will grow much faster. The state should continue to see the slight inmigration it has experienced over the last five years.

It must be emphasized that these projections are the result of specific assumptions about the basic industries in Montana. In order for the state to continue to hold its own and not lose population by net outmigration, its primary industries must at least remain stable. Since agriculture will continue to lose workers as it has in the past two decades, other basic industries must take up the slack. In the last five years, coal and petroleum-related industries and the federal government have done so and, in the future, these industries and some mineral-related activity may well continue to provide the necessary economic base. An unexpected decline due to outside forces in any basic industry could, of course, cause these projections to be badly off the mark.

# *CONCLUSIONS*

What, then, is the direction of Montana's economy? The economy has been expanding rapidly since 1970 with increases in employment large enough to halt the high levels of net-outmigration which the state experienced throughout the two previous decades. Simply stated, employment increases have kept pace with population growth. This is obviously a very healthy sign for Montana's economy.

Although most of the new jobs have been in the service and trade sectors, income has steadily increased. This derivative expansion has not been unique to Montana but has been true for the nation as well. However, in order for this expansion to continue, the main sources of Montana's income and employment, the resource industries, must remain healthy. Since the future of the dominant industries is largely determined by external forces, public and private decision makers must carefully assess national policies which will determine the success or decline of their industries.

Many crucial trade-offs will exist in the future. For example, a national farm policy which would benefit Montana would necessitate higher food prices, and would be met with resistance nationally. Timber cutting and mining policies are even more complex when environmental costs are weighed. No simple solutions exist in such complex situations, but Montanans should insure that their input is made known to national decision makers when the health of the vital basic industries is at stake.

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